User Manual

Open Platform

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Overall Table of Contents

1 Important Notes 1-1
1.1 Symbols 1-1
1.2 Safety Notes 1-1
1.3 Intended Use 1-1
1.4 Target Group 1-1

2 Introduction 2-1
2.1 Hardware and Software Requirements 2-1

3 Operating device configure 3-1
3.1 IP Address 3-1
3.2 Connection to Visual Studio 3-4

4 Visual Studio 4-1
4.1 Create Project 4-1
4.2 Device Settings 4-3
4.3 Debugging / Deploying Project 4-6

5 Extended Configuration 5-1
5.1 Starting Project Automatically 5-1
5.2 Backup 5-1

A Index A-1

1 Important Notes

1.1 Symbols

The symbols in this manual are used to draw your attention on notes and dangers.

Danger
This symbol is used to refer to instructions which, if ignored or not carefully followed could result in personal injury.

Note
This symbol indicates application tips or supplementary notes.

Reference to source of information
This symbol refers to detailed sources of information on the current topic.

1.2 Safety Notes

- Read this manual carefully before using the software. Keep this manual in a place where it is always accessible to all users.
- The user manual, in particular the safety notes, must be observed by all personnel working with the software and the programmed device.
- Observe the accident prevention rules and regulations that apply to the operating site.
- Installation and operation must only be carried out by qualified and trained personnel.

1.3 Intended Use

- The software has to be used for programming operating devices exclusively. Every other use is not permitted.

1.4 Target Group

All configuration and programming work in connection with the automation system must be performed by trained personnel only (e.g. qualified electricians, electrical engineers).

The configuration and programming personnel must be familiar with the safety concepts of automation technology.

2 Introduction

This manual describes the configuration of Sütron operating devices with an open platform in use with the development environment of Microsoft Visual Studio.

2.1 Hardware and Software Requirements

The descriptions in this manual presuppose basis knowledge in handling Windows as well as programming knowledge which cannot imparted in this manual. If you should have any questions regarding this, we refer to the manuals for Windows or its online help.

Your computer should at least have the following hardware and software requirements:

- Computer with 1.6 GHz or better,
- 512 MByte main memory (RAM) or better,
- 100 MByte free hard disk memory,
- CD-/DVD drive,
- mouse,
- Windows XP / Windows Vista
- Microsoft Visual Studio 2005 / 2008 Professional or Visual Studio Team System 2005 / 2008

3 Operating device configure

3.1 IP Address

To enable access to the operating device the following conditions must be filled:

– The operating device is connected with a network cable
– An ip address is configured or was allocated by the DHCP server

Some settings are password-protected. The password is "+-+-".

To display or adapt the ip configuration of the operating device, start the „operating mode Setup Main“:

1. Click twice on the desktop symbol **launch**.

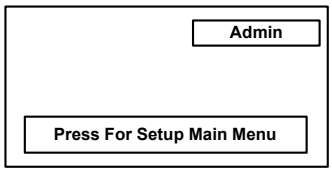

Figure 3-1 Admin / Setup Main Menu

2. Click on the button **Press For Setup Main Menu**.

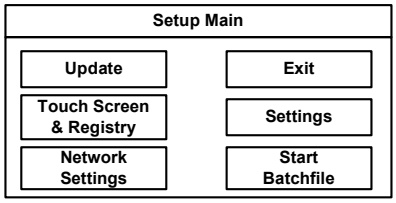

Figure 3-2 Setup Main

3. Click on the button **Network Settings**.

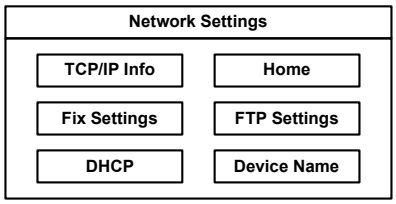

Figure 3-3 Network Settings

4. Click on the button **TCP/IP Info** to display the current adjustings.

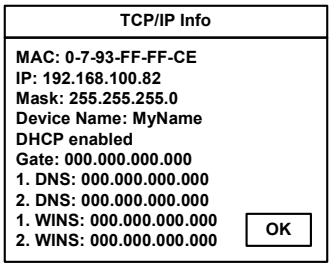

Figure 3-4 TCP/IP Info

The following informations are displayed:

- MAC address,
- IP address,
- Subnet mask address,
- Device name,
- DHCP status,
- Gateway address,
- 1. DNS address,
- 2. DNS address,
- 1. WINS address,
- 2. WINS address.

5. Click on the button **OK** to close the dialog.

Assign ip manually

If no DHCP server is available or the ip address shall manually be assigned, you proceed as follows:

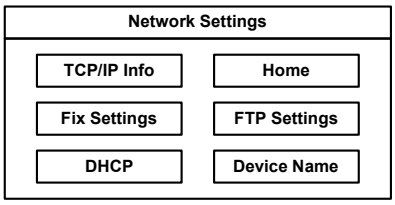

Figure 3-5 Network Settings

1. Click on the button **Fix Settings**.

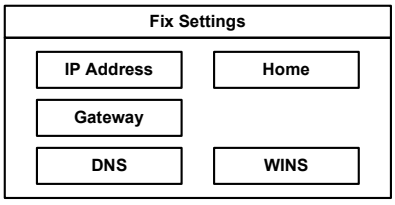

Figure 3-6 Fix Settings

2. Click on the button **IP Address**.
3. Enter the password if active.

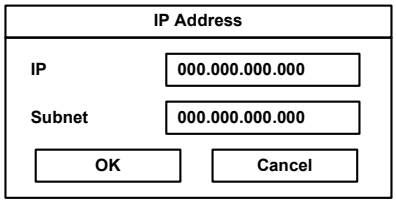

Figure 3-7 IP Address

The system automatically deselects DHCP and optionally enters the settings from the IPSetting.ini file of the USB stick. This file must exist in the root directory of the USB stick.
If no USB stick is connected the information is read from the registry.

4. Allocate an available ip address and the subnet mask or confirm the read in values with the button **OK**.

Contents of the IPSetting.ini file:

```
[IPCONFIG]
IPAddress=172.016.042.150
SubnetMask=255.255.255.000
```

Assign ip automatically

The ip address can be allocated automatically with an available DHCP server.

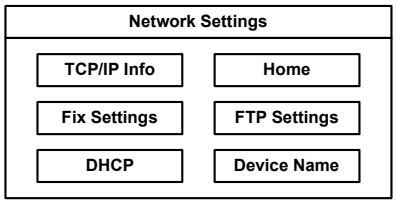

Figure 3-8 Network Settings

1. Click on the button **DHCP**.
2. Enter the password if active.

You may enable DHCP service. You must save this setting when exiting of by using „Save Registry Settings“.

You find out the current IP-address after a restart of the operating device at the menu item **TCP/IP Info**.

Please see further documentation to the configuration and administration from the device-specific user manual.

3.2 Connection to Visual Studio

The operating device is configured per default for a connection with Visual Studio 2008. To make this connection, a batch file (project.bat) with the following contents is available in the flash memory of the device:

```
rem batch File to connect device to Visual Studio 2008
cd \FlashDrv\debug-connection-vs2008

copy clientshutdown.exe \windows
copy ConmanClient2.exe \windows
copy CMaccept.exe \windows
copy eDbgTL.dll \windows
copy TcpConnectionA.dll \windows
copy Debug-connection-Start.bat \windows\desktop

cd \windows

start ConmanClient2.exe


rem ************************************************************
rem Connect the device with Visual Studio 2008 :
rem
rem use : Visual Studio Menue : tools : connect to device
rem
rem see also http://msdn.microsoft.com/de-de/library/ms228708.aspx
rem
rem ************************************************************

cd \windows
CMaccept.exe
```

Visual Studio 2005

For the use with Visual Studio 2005 you have to adapt the batch file:

1. Open your FTP program or the Windows Explorer and enter the ip address of the operating device as address (Example: ftp://149.208.160.232).
2. Download the file project.bat to your local file system.
3. You edit the path entry of the second line with an editor (for example: Notepad):

```
debug-connection-vs2008
```

Replace with:

```
debug-connection-vs2005
```

4. Save the batch file.
5. Upload the file to the operating device with the FTP program again and overwrite the old version.

Execute project.bat

To make the connection to Visual Studio possible, execute the file project.bat:

1. Click twice on the desktop symbol **launch**

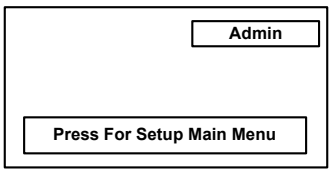

Figure 3-9 Admin / Setup Main Menu

2. Click on the button **Press For Setup Main Menu**.

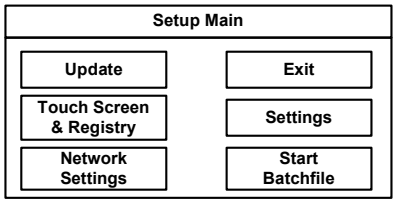

Figure 3-10 Setup Main

3. Click on the button **Start Batchfile**.

The batch file is executed.

4 Visual Studio

4.1 Create Project

Open Visual Studio and create a new project as follows:

1. Click in the menu **File -> New** on the entry **Project...**.

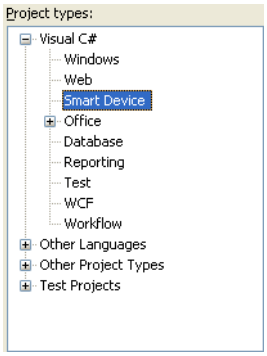

Figure 4-1 Project type

2. Choose the branch **Visual C# -> Smart Device** in the area Project types.

The template **Smart Device Project** should already be selected automatically.

3. Click on the button **OK**.

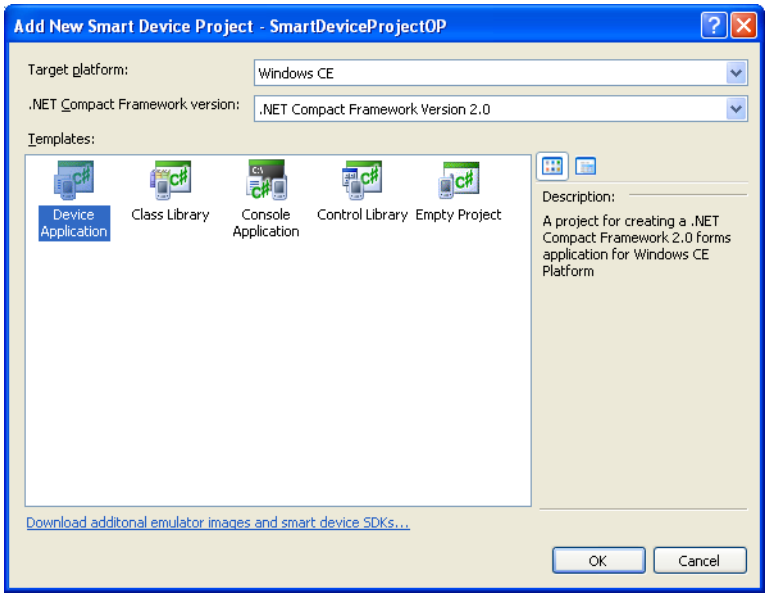

Figure 4-2 Add new Smart Device Project

4. Select the target platform **Windows CE**, the **Compact Framework Version 2.0** and the template **Device Application**.
5. Click on the button **OK**.

Visual studio creates an empty form for the application.

To adapt the application to the proportions of the target device, carry out the following steps:

1. Mark the form **Form1**.
2. Select the entry **Size** from the property window and type in the width and height of the resolution of your operating device in pixels.

Please read the resolution of the display from the product specific user manual.

4.2 Device Settings

To connect Visual studio with the operating device, the following settings must be carried out:

1. Click on the button **Device Options**.

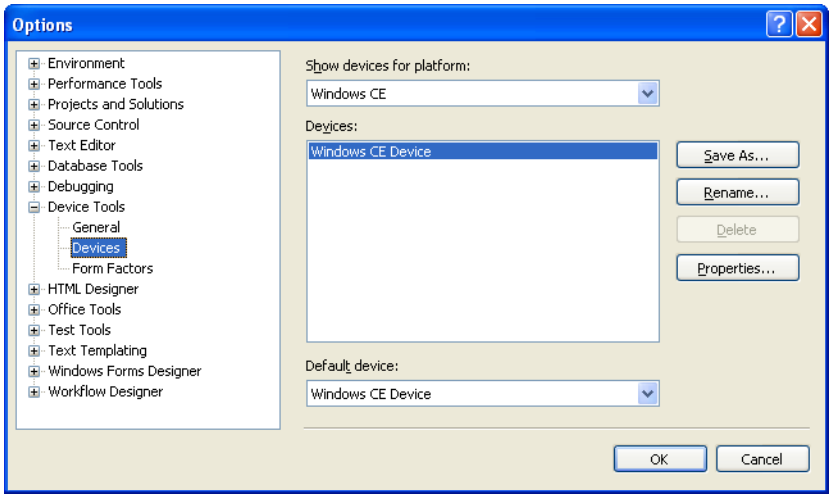

Figure 4-3 Device options

2. Select the branch **Devices** from the **Device Tools** tree.
3. Mark the entry **Windows CE** in the **Show devices for platform** list box.
4. Select **Windows CE Device** as **Default device**.
5. Click on the button **Properties...**.

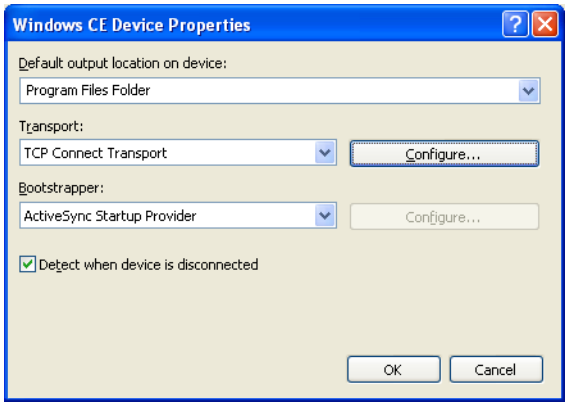

Figure 4-4 Device settings, properties

6. Click on the button **Configure...**.

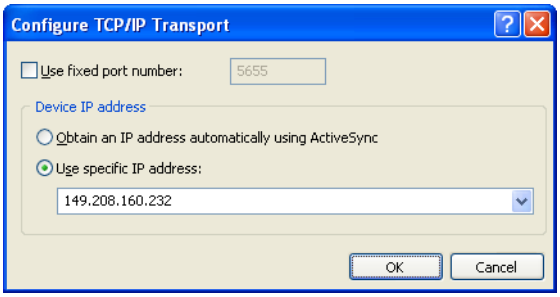

Figure 4-5 Device settings, configure TCP/IP transport

7. Select the option **use specific IP address** and enter the IP address of the operating device.
8. Confirm all dialogs with the button **OK**.

To define the output folder for the project, you still have to carry out the following steps:

1. Click on the entry **ProjectName Properties...** in the **Project** menu.
2. Select the tab **Devices**.

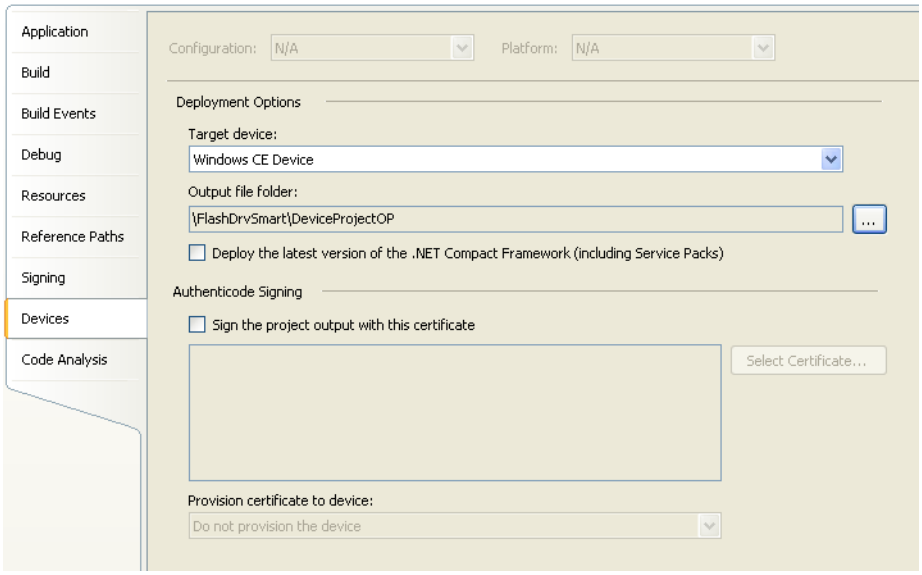

Figure 4-6 Project properties, devices

3. Remove the hook of the check box **Deploy the latest version of the .Net Compact Framework (including service packs)**.
4. Click on the button **...** on line **Output file folder**.

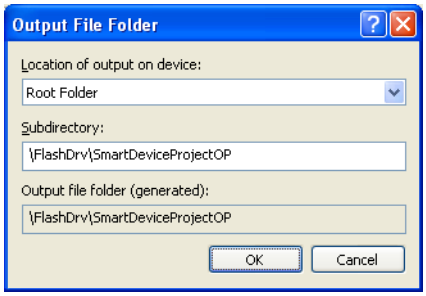

Figure 4-7 Project properties, output file folder

5. Select the entry **Root Folder** from the list box **Location of output on device**.
6. Enter the device memory and the project name to the field subdirectory (for example „\FlashDrv\SmartDeviceProjectOP“).
7. Click on the button **OK**.

4.3 Debugging / Deploying Project

The configuration of the operating device and Visual studio makes it possible to debug or deploy your project now.

Debugging

To transfer and debug the project to the operating device, you proceed as follows:

1. Click on the button **Start Debugging**.

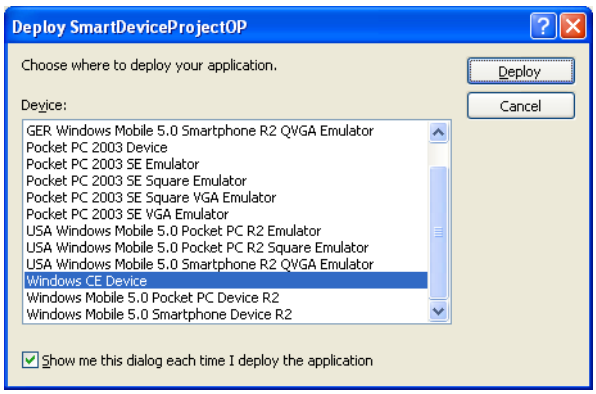
Deploy SmartDeviceProjectOP
Choose where to deploy your application.
Deploy
Cancel
Device:
GER Windows Mobile 5.0 Smartphone R2 QVGA Emulator
Pocket PC 2003 Device
Pocket PC 2003 SE Emulator
Pocket PC 2003 SE Square Emulator
Pocket PC 2003 SE Square VGA Emulator
Pocket PC 2003 SE VGA Emulator
USA Windows Mobile 5.0 Pocket PC R2 Emulator
USA Windows Mobile 5.0 Pocket PC R2 Square Emulator
USA Windows Mobile 5.0 Smartphone R2 QVGA Emulator
Windows CE Device
Windows Mobile 5.0 Pocket PC Device R2
Windows Mobile 5.0 Smartphone Device R2
Show me this dialog each time I deploy the application

Figure 4-8 Debug project

2. Click on the button **Deploy**.

The project is transferred to the defined place and started.

Deploying

You can deploy the project also at the configured place:

1. Select the menu item **Deploy Solution** in the **Build** menu.

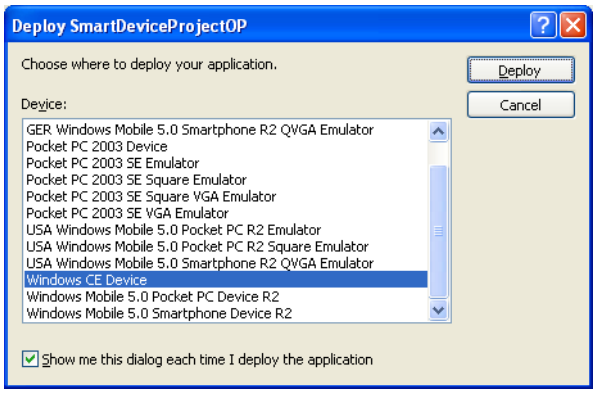
Deploy SmartDeviceProjectOP
Choose where to deploy your application.
Deploy
Cancel
Device:
GER Windows Mobile 5.0 Smartphone R2 QVGA Emulator
Pocket PC 2003 Device
Pocket PC 2003 SE Emulator
Pocket PC 2003 SE Square Emulator
Pocket PC 2003 SE Square VGA Emulator
Pocket PC 2003 SE VGA Emulator
USA Windows Mobile 5.0 Pocket PC R2 Emulator
USA Windows Mobile 5.0 Pocket PC R2 Square Emulator
USA Windows Mobile 5.0 Smartphone R2 QVGA Emulator
Windows CE Device
Windows Mobile 5.0 Pocket PC Device R2
Windows Mobile 5.0 Smartphone Device R2
Show me this dialog each time I deploy the application

Figure 4-9 Deploy project

2. Click on the button **Deploy**.

The project is transferred to the defined place.

5 Extended Configuration

5.1 Starting Project Automatically

After the booting procedure the file starter.bat is automatically executed. You can use it to start the project automatically.

The project files should be copied and executed to the RAM memory for this purpose. This accelerates the access and prevents, that the project files - for example for updates - are blocked if these are executed at the moment.

You can modify the file starter.bat as follows:

1. Open your FTP program or the Windows Explorer and enter the ip address of the operating device as address (Example: ftp://149.208.160.232).
2. Download the file starter.bat to your local file system.
3. Extend the batch file with an editor (for example: Notepad):

```
REM Starter.bat
REM This batch-file will automatically start the application upon boot.
REM 1. Copy data from remanent storage to RAM disc
REM (remanent storage is either at:
REM emPower Line devices: \StorageCard
REM Slim Line devices: \FlashDrv
REM 2. Start application executable
REM prepare directories for application in RAM disc
md \SmartDeviceProjectOP
REM copy application files from remanent storage to RAM disc
copy \FlashDrv\SmartDeviceProjectOP\*.* \SmartDeviceProjectOP
REM start application at RAM disc
cd \SmartDeviceProjectOP
start SmartDeviceProjectOP.exe
```

4. Save the batch file.
5. Upload the file to the operating device with the FTP program again and overwrite the old version.

At the next start of the operating device the project is copied automatically and then started.

5.2 Backup

A backup of the data (for example: Project data, start configuration etc.) of the permanent memory (flash) on a USB stick is made as follows:

1. Put a USB stick into the female connector at the operating device.
2. Click twice on the desktop symbol **launch** at the operating device.

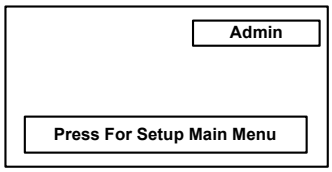

Figure 5-1 Admin / Setup Main Menu

3. Click on the button **Press For Setup Main Menu**.

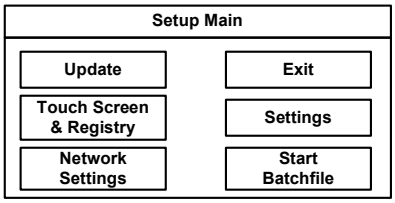

Figure 5-2 Setup Main

4. Click on the button **Update**.

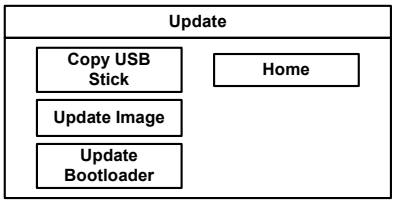

Figure 5-3 Update

5. Click on the button **Copy USB Stick**.

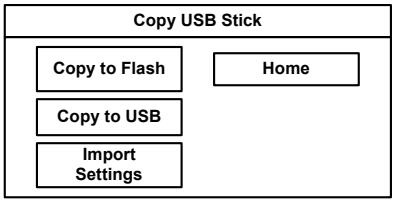

Figure 5-4 Copy USB Stick

6. Click on the button **Copy to USB** to start the backup.

All data of the flash memory are copied into the directory backup of the USB stick. Protected system files are excepted. Among other things also a logging file is transfered. This logging file makes it possible to restore system settings with the **Import Settings** button.

A Index

B

Backup 5-1

E

Extended configuration 5-1

H

Hardware requirements 2-1

I

Important notes 1-1
Intended use 1-1
IP address 3-1

O

Operating device
    Configure 3-1

S

Safety notes 1-1
Software requirements 2-1
Symbols 1-1

T

Target group 1-1

V

Visual Studio 4-1
    Create project 4-1
    Debug project 4-6
    Deploy project 4-6
    Device settings 4-3